



Institute for Materials Science

UNCLASSIFIED

IMS Distinguished Lecture Series



Dr. Krastan B. Blagoev
Program Director, Physics of Living Systems
National Science Foundation, Arlington, VA

Physics of Living Systems: Trends and Opportunities at the Interface of Physics and Biology

Tuesday, August 16, 2016
2:00 - 3:00 pm
MSL Auditorium (TA-03 - Bldg 1698 - Room A103)

Abstract: Biology and medicine are at the verge of a qualitative change thanks to their close integration with the physical and mathematical science and engineering. Novel techniques and quantitative theories help move these fields in new directions and we hope to be able to understand and use in practice the physical principles operating in living systems in their environment. In this talk the broad questions that are being studied by physicists working in biology and the goals of the new physics field of Physics of Living Systems will be described. Physicists are now also working hand in hand with oncologists to develop deeper understanding of cancer as well as new treatments. The BRAIN initiative and the role NSF is playing in it together with Argonne National Laboratory will also be discussed. NSF is leading the international community in educating the next generation of scientists through the International Physics of Living Systems Graduate Student Network, in which CNLS at LANL is starting to play important role. At the end funding opportunities and priorities for physicists working at the interface of physics and biology will be discussed and the future of Physics of Living Systems in the broader context of physics will be put forward for questions.

Bio: Dr. Blagoev completed his first MS degree in Nuclear and Elementary Particle Physics at Sofia University in 1990 and a second MS degree at the Physics Department at Florida Atlantic University in 1992. He received a PhD from the Physics Department at Boston College in 1998 and continued his research on superconductivity and magnetism at University of Cambridge as a postdoctoral fellow. In 1999 he moved to Harvard University Medical School working on mathematical models of ultrasound propagation in the brain. In 2002 he joined the Theoretical Division of Los Alamos National Laboratory as a staff member working on condensed matter physics as well as mathematical models of telomere dynamics and its influence on aging and cancer. Dr. Blagoev moved to the National Science Foundation as a Program Director in the Division of Physics in 2007, where he currently directs the Physics of Living Systems program. Since 2015 he is an Adjunct Research Scientist at the Department of Biophysics at Johns Hopkins University. His research interests focus on understanding the mechanisms of tumor growth during cancer progression and analysis of cancer clinical trials. He is also interested in the non-equilibrium statistical physics of mammalian cells and its influence on organismal aging.

For general information contact Caryll Blount * IMS Administrator
caryll@lanl.gov * 665-3950

*Hosted by Alexander Balatsky * Director of the Institute for Materials Science*